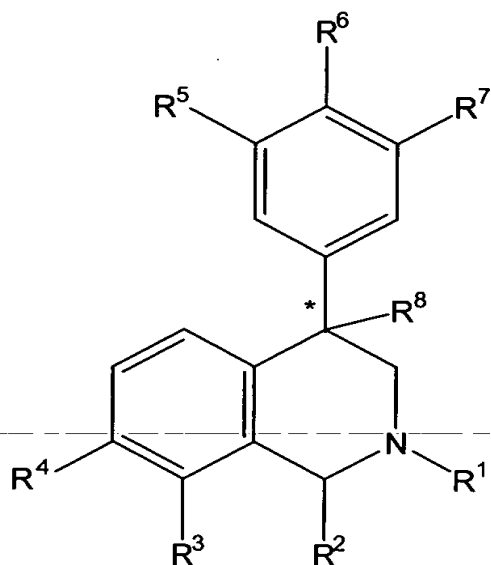


Q2



IA-IF

wherein:

the carbon atom designated * is in the R or S configuration;

R¹ is C₁-C₆ alkyl, C₂-C₆ alkenyl, C₂-C₆ alkynyl, C₃-C₆ cycloalkyl or C₄-C₇ cycloalkylalkyl, each of which is optionally substituted with 1 to 3 substituents independently selected at each occurrence thereof from C₁-C₃ alkyl, halogen, aryl, -CN, OR⁹ and -NR⁹R¹⁰;

R² is H, C₁-C₆ alkyl, C₂-C₆ alkenyl, C₂-C₆ alkynyl, C₃-C₆ cycloalkyl, C₄-C₇ cycloalkylalkyl or C₁-C₆ haloalkyl;

R³ is H, halogen, -OR¹¹, -S(O)_nR¹², -S(O)_nNR¹¹R¹², -CN, -C(O)R¹², -C(O)NR¹¹R¹², C₁-C₆ alkyl, C₂-C₆ alkenyl, C₂-C₆ alkynyl, C₃-C₆ cycloalkyl, C₄-C₇ cycloalkylalkyl, -O(phenyl) or -O(benzyl), wherein each of -O(phenyl) and -O(benzyl) is optionally substituted from 1 to 3 times with a substituent selected independently at each occurrence thereof from halogen, cyano, C₁-C₄ alkyl, C₁-C₄ haloalkyl, or C₁-C₄ alkoxy, or wherein R³ is a C₁-C₆ alkyl, C₂-C₆ alkenyl, C₂-C₆ alkynyl, C₃-C₆ cycloalkyl or C₄-C₇ cycloalkylalkyl group, then said group is optionally substituted with from 1 to 3 substituents selected independently at each occurrence thereof from C₁-C₃ alkyl, halogen, aryl, -CN, -OR⁹ and -NR⁹R¹⁰; provided that for compounds of formula IA, R³ is C₁-C₆ alkyl, C₂-C₆ alkenyl, C₂-C₆ alkynyl, C₃-C₆ cycloalkyl or C₄-C₇ cycloalkylalkyl, each of which is optionally

substituted with from 1 to 3 substituents selected independently at each occurrence thereof from C₁-C₃ alkyl, halogen, aryl, -CN, -OR⁹ and -NR⁹R¹⁰;

provided that for compounds of formula IB, R³ is -O(phenyl), -O(benzyl), -OC(O)R¹³ or S(O)_nR¹², each of -O(phenyl) and -O(benzyl) is optionally substituted from 1 to 3 times with a substituent selected independently at each occurrence thereof from halogen, cyano, C₁-C₄ alkyl, C₁-C₄ haloalkyl, or C₁-C₄ alkoxy;

R⁴ is H, halogen, -OR¹¹, -S(O)_nR¹², -S(O)NR¹¹R¹², -CN, -C(O)R¹², -C(O)NR¹¹R¹², -NR¹¹R¹², C₁-C₆ alkyl, C₂-C₆ alkenyl, C₂-C₆ alkynyl, C₃-C₆ cycloalkyl, C₄-C₇ cycloalkylalkyl, -O(phenyl) or -O(benzyl), wherein each of -O(phenyl) and -O(benzyl) is optionally substituted from 1 to 3 times with a substituent selected independently at each occurrence thereof from halogen, cyano, C₁-C₄ alkyl, C₁-C₄ haloalkyl, or C₁-C₄ alkoxy and wherein R⁴ is a C₁-C₆ alkyl, C₂-C₆ alkenyl, C₂-C₆ alkynyl, C₃-C₆ cycloalkyl or C₄-C₇ cycloalkylalkyl group, then said group is optionally substituted with from 1 to 3 substituents selected independently at each occurrence thereof from C₁-C₃ alkyl, halogen, aryl, -CN, -OR⁹ and -NR⁹R¹⁰; provided that for compounds of formula IC, R⁴ is C₁-C₆ alkyl, C₂-C₆ alkenyl, C₂-C₆ alkynyl, C₃-C₆ cycloalkyl or C₄-C₇ cycloalkylalkyl, each of which is optionally substituted; provided that for compounds of formula ID, R⁴ is -O(phenyl), -O(benzyl), -OC(O)R¹³, -NR¹¹R¹² or -S(O)_nR¹², each of -O(phenyl) and -O(benzyl) being optionally substituted, wherein R³ and R⁴ are not both H;

R⁵, R⁶ and R⁷ in compounds of each of the formulae IA, IB, IC, ID, IE and IF are each independently H, halogen, -OR¹¹, -S(O)_nR¹², -CN, -C(O)R¹², -NR¹¹R¹², -C(O)NR¹¹R¹², -NR¹¹C(O)R¹², -NR¹¹C(O)₂R¹², -NR¹¹C(O)NR¹²R¹³, C₁-C₆ alkyl, C₂-C₆ alkenyl, C₂-C₆ alkynyl, C₃-C₆ cycloalkyl or C₄-C₇ cycloalkylalkyl, wherein each of R⁵, R⁶ and R⁷ is a C₁-C₆ alkyl, C₂-C₆ alkenyl, C₂-C₆ alkynyl, C₃-C₆ cycloalkyl or C₄-C₇ cycloalkylalkyl group, then said group is optionally substituted with from 1 to 3 substituents selected independently at each occurrence thereof from C₁-C₃ alkyl, halogen, aryl, -CN, -OR⁹ and -NR⁹R¹⁰, or R⁵ and R⁶ or R⁶ and R⁷ may be -O-C(R¹²)₂-O-; provided that for compounds of formula IE at least one of R⁵ or R⁷ is fluoro, chloro, or methyl; or R⁵ or R⁶ are each independently -O-C(R¹²)₂-O- in compounds of the formulae IE, but only where R⁷ is fluoro, chloro or methyl; or R⁷ and R⁶ can independently also be -O-C(R¹²)₂-O- in compounds of the formulae IE, but only where R⁵ is fluoro, chloro or methyl;

R⁸ is H or halogen, provided that for compounds of formula IF, R⁸ is halogen;

a² R⁹ and R¹⁰ are each independently H, C₁-C₄ alkyl, C₁-C₄ haloalkyl, C₁-C₄ alkoxyalkyl, C₃-C₆ cycloalkyl, C₄-C₇ cycloalkylalkyl, -C(O)R¹³, phenyl or benzyl, where phenyl or benzyl is optionally substituted from 1 to 3 times with a substituent selected independently at each occurrence thereof from halogen, cyano, C₁-C₄ alkyl, C₁-C₄ haloalkyl, or C₁-C₄ alkoxy; or R⁹ and R¹⁰ are taken together with the nitrogen to which they are attached to form piperidine, pyrrolidine, piperazine, N-methylpiperazine, morpholine, or thiomorpholine;

R¹¹ is H, C₁-C₄ alkyl, C₁-C₄ haloalkyl, C₁-C₄ alkoxyalkyl, C₃-C₆ cycloalkyl, C₄-C₇ cycloalkylalkyl, -C(O)R¹³, phenyl or benzyl, where R¹¹ is a C₁-C₄ alkyl, phenyl or benzyl group, then said group is optionally substituted from 1 to 3 times with a substituent selected independently at each occurrence thereof from halogen, cyano, C₁-C₄ alkyl, C₁-C₄ haloalkyl, or C₁-C₄ alkoxy;

R¹² is H, amino, C₁-C₄ alkyl, (C₁-C₄ alkyl)amino, C₁-C₄ haloalkyl, C₁-C₄ alkoxyalkyl, C₃-C₆ cycloalkyl, C₄-C₇ cycloalkylalkyl, phenyl or benzyl, where phenyl or benzyl is optionally substituted from 1 to 3 times with a substituent selected independently from halogen, cyano, C₁-C₄ alkyl, C₁-C₄ haloalkyl and C₁-C₄ alkoxy; or R¹¹ and R¹² are taken together with the nitrogen to which they are attached to form piperidine, pyrrolidine, piperazine, N-methylpiperazine, morpholine, or thiomorpholine;

provided that only one of R⁹ and R¹⁰ or R⁹ and R¹⁰ are taken together with the nitrogen to which they are attached to form piperidine, pyrrolidine, piperazine, N-methylpiperazine, morpholine, or thiomorpholine;

R¹³ is C₁-C₄ alkyl, C₁-C₄ haloalkyl or phenyl;

n is 0, 1, or 2, and;

aryl is phenyl which is optionally substituted 1-3 times with halogen, cyano, C₁-C₄ alkyl, C₁-C₄ haloalkyl and C₁-C₄ alkoxy, or

an oxide thereof, or a pharmaceutically acceptable salt thereof, wherein the compound has a binding affinity for dopamine transporter protein to a binding affinity for norepinephrine transporter protein ratio of at least 2:1 and a binding affinity for serotonin transporter protein to a binding affinity for norepinephrine transporter protein ratio of at least 20:1.

a³

14. (Amended) The compound of claim 1, wherein R³ and R⁴ are each halogen.

a⁴

30. (Amended) A compound according to claim 1, selected from the group consisting of the following compounds:

- 2,7-dimethyl-4-phenyl-1,2,3,4-tetrahydroisoquinoline;
- 4-(4-methoxy)phenyl-2,7-dimethyl-1,2,3,4-tetrahydroisoquinoline;
- 2,7-dimethyl-4-(4-fluoro)phenyl-1,2,3,4-tetrahydroisoquinoline;
- 2,7-dimethyl-4-(3-fluoro)phenyl-1,2,3,4-tetrahydroisoquinoline;
- 4-(3,4-difluoro)phenyl-2,7-dimethyl-1,2,3,4-tetrahydroisoquinoline;
- 2,7-dimethyl-4-(4-fluoro-3-methyl)phenyl-1,2,3,4-tetrahydroisoquinoline;
- 4-(3-chloro-4-fluoro)phenyl-2,7-dimethyl-1,2,3,4-tetrahydroisoquinoline;
- 4-(3-chloro)phenyl-2,7-dimethyl-1,2,3,4-tetrahydroisoquinoline;
- 2,7-dimethyl-4-(4-methyl)phenyl-1,2,3,4-tetrahydroisoquinoline;
- 2,7-dimethyl-4-(3-fluoro-4-methyl)phenyl-1,2,3,4-tetrahydroisoquinoline;
- 4-(4-chloro)phenyl-2,7-dimethyl-1,2,3,4-tetrahydroisoquinoline;
- 4-(4-chloro-3-fluoro)phenyl-2,7-dimethyl-1,2,3,4-tetrahydroisoquinoline;
- 4-(3,4-dichloro)phenyl-2,7-dimethyl-1,2,3,4-tetrahydroisoquinoline;
- 7-ethyl-2-methyl-4-phenyl-1,2,3,4-tetrahydroisoquinoline;
- 4-(3,4-difluoro)phenyl-7-ethyl-2-methyl-1,2,3,4-tetrahydroisoquinoline;
- 7-fluoro-4-(4-methoxy)phenyl-2-methyl-1,2,3,4-tetrahydroisoquinoline;
- 7-fluoro-4-(3-fluoro-4-methoxy)phenyl-2-methyl-1,2,3,4-tetrahydroisoquinoline;
- 7-fluoro-4-(3-fluoro-4-methyl)phenyl-2-methyl-1,2,3,4-tetrahydroisoquinoline;
- 7-fluoro-4-(4-chloro-3-fluoro)phenyl-2-methyl-1,2,3,4-tetrahydroisoquinoline;
- 4-(3,4-difluoro)phenyl-7-fluoro-2-methyl-1,2,3,4-tetrahydroisoquinoline;
- 4-(3-chloro)phenyl-7-fluoro-2-methyl-1,2,3,4-tetrahydroisoquinoline;
- 7-cyano-2-methyl-4-phenyl-1,2,3,4-tetrahydroisoquinoline;
- 2-methyl-4-phenyl-7-trifluoromethyl-1,2,3,4-tetrahydroisoquinoline;
- 4-phenyl-1,2,7-trimethyl-1,2,3,4-tetrahydroisoquinoline;
- 4-phenyl-2,7,8-trifluoromethyl-1,2,3,4-tetrahydroisoquinoline;
- 2,7-dimethyl-8-fluoro-4-phenyl-1,2,3,4-tetrahydroisoquinoline;
- 2,8-dimethyl-7-fluoro-4-phenyl-1,2,3,4-tetrahydroisoquinoline;

Q4

2,7-dimethyl-8-methoxy-4-phenyl-1,2,3,4-tetrahydroisoquinoline;
2,7-dimethyl-8-hydroxy-4-phenyl-1,2,3,4-tetrahydroisoquinoline;
2-methyl-4-phenyl-7-trifluoromethoxy-1,2,3,4-tetrahydroisoquinoline;
4-(3,4-difluoro)phenyl-7-methoxy-2-methyl-1,2,3,4-tetrahydroisoquinoline;
4-(4-fluoro-3-methyl)phenyl-7-methoxy-2-methyl-1,2,3,4-tetrahydroisoquinoline;
4-(3-fluoro-4-methyl)phenyl-7-methoxy-2-methyl-1,2,3,4-tetrahydroisoquinoline;
7-methoxy-4-(3-methyl)phenyl-2-methyl-1,2,3,4-tetrahydroisoquinoline;
2-methyl-7-phenoxy-4-phenyl-1,2,3,4-tetrahydroisoquinoline;
7-(4-methoxy)phenoxy-2-methyl-4-phenyl-1,2,3,4-tetrahydroisoquinoline;
7-benzyloxy-2-methyl-4-phenyl-1,2,3,4-tetrahydroisoquinoline;
7-hydroxy-2-methyl-4-(3-methyl)phenyl-1,2,3,4-tetrahydroisoquinoline;
4-(3-fluoro-4-methyl)phenyl-7-hydroxy-2-methyl-1,2,3,4-tetrahydroisoquinoline;
4-(4-fluoro-3-methyl)phenyl-7-hydroxy-2-methyl-1,2,3,4-tetrahydroisoquinoline;
4-(3,4-difluoro)phenyl-7-hydroxy-2-methyl-1,2,3,4-tetrahydroisoquinoline;
2,8-dimethyl-4-phenyl-1,2,3,4-tetrahydroisoquinoline;
2,8-dimethyl-4-(4-fluoro)phenyl-1,2,3,4-tetrahydroisoquinoline;
4-(3,4-difluoro)phenyl-2,8-dimethyl-1,2,3,4-tetrahydroisoquinoline;
4-(3,5-difluoro)phenyl-2,8-dimethyl-1,2,3,4-tetrahydroisoquinoline;
2,8-dimethyl-4-(3-fluoro)phenyl-1,2,3,4-tetrahydroisoquinoline;
2,8-dimethyl-4-(4-fluoro-3-methyl)phenyl-1,2,3,4-tetrahydroisoquinoline;
4-(3-chloro-4-fluoro)phenyl-2,8-dimethyl-1,2,3,4-tetrahydroisoquinoline;
4-(3,4-dichloro)phenyl-2,8-dimethyl-1,2,3,4-tetrahydroisoquinoline;
4-(3-chloro)phenyl-2,8-dimethyl-1,2,3,4-tetrahydroisoquinoline;
4-(4-chloro)phenyl-2,8-dimethyl-1,2,3,4-tetrahydroisoquinoline;
4-(4-chloro-3-fluoro)phenyl-2,8-dimethyl-1,2,3,4-tetrahydroisoquinoline;
2,8-dimethyl-4-(4-methoxy)phenyl-1,2,3,4-tetrahydroisoquinoline;
4-(4-cyano)phenyl-2,8-dimethyl-1,2,3,4-tetrahydroisoquinoline;
2,8-dimethyl-4-(4-trifluoromethyl)phenyl-1,2,3,4-tetrahydroisoquinoline;
2,8-dimethyl-4-(4-methyl)phenyl-1,2,3,4-tetrahydroisoquinoline;
2-methyl-8-(N-methylamino)methyl-4-phenyl-1,2,3,4-tetrahydroisoquinoline;
8-(hydroxy)methyl-2-methyl-4-phenyl-1,2,3,4-tetrahydroisoquinoline;
2-methyl-4-phenyl-8-sulfonamide-1,2,3,4-tetrahydroisoquinoline;

a4

2-methyl-8-(N-methyl)sulfonamide-4-phenyl-1,2,3,4-tetrahydroisoquinoline;
 8-methoxy-2-methyl-4-(4-methyl)phenyl-1,2,3,4-tetrahydroisoquinoline;
 4-(3,5-difluoro)phenyl-8-methoxy-2-methyl-1,2,3,4-tetrahydroisoquinoline;
 4-(3-chloro)phenyl-8-methoxy-2-methyl-1,2,3,4-tetrahydroisoquinoline;
 4-(3,4-dichloro)phenyl-8-methoxy-2-methyl-1,2,3,4-tetrahydroisoquinoline;
 4-(4-chloro-3-fluoro)phenyl-8-methoxy-2-methyl-1,2,3,4-tetrahydroisoquinoline;
 4-(3-chloro-4-fluoro)phenyl-8-methoxy-2-methyl-1,2,3,4-tetrahydroisoquinoline;
 4-(3,5-difluoro)phenyl-2,7-dimethyl-1,2,3,4-tetrahydroisoquinoline;
 4-(3-chloro-5-fluoro)phenyl-2,7-dimethyl-1,2,3,4-tetrahydroisoquinoline;
 4-(3,5-difluorophenyl-1,2,7-trimethyl-1,2,3,4-tetrahydroisoquinoline;
 (8-fluoro-2-methyl-4-phenyl-1,2,3,4-tetrahydro-7-isoquinoliny)-N-methylmethanamine;
 2-methyl-4-phenyl-1,2,3,4-tetrahydro-7-isoquinoliny)-N-methylmethanamine;
 N-methyl(2-methyl-4-phenyl-1,2,3,4-tetrahydro-7-isoquinoliny)-N-methylmethanamine;
 8-hydroxy-2-methyl-4-phenyl-1,2,3,4-tetrahydro-7-isoquinolinecarbonitrile; and
 (2-methyl-4-phenyl-1,2,3,4-tetrahydro-7-isoquinoliny)methanol;
 an oxide thereof, or a pharmaceutically acceptable salt thereof.

31. (Amended) A compound according to claim 1, selected from the group consisting of the following compounds:

	R ¹	R ²	R ³	R ⁴	R ⁵	R ⁶	R ⁷	R ⁸
1.	Me	H	H	Me	H	H	H	H
2.	Me	H	H	Me	H	OMe	H	H
3.	Me	H	H	Me	H	F	H	H
4.	Me	H	H	Me	F	H	H	H
5.	Me	H	H	Me	F	F	H	H
6.	Me	H	H	Me	Me	F	H	H
7.	Me	H	H	Me	Cl	F	H	H
8.	Me	H	H	Me	Cl	H	H	H
9.	Me	H	H	Me	H	Me	H	H
10.	Me	H	H	Me	F	Me	H	H
11.	Me	H	H	Me	H	Cl	H	H
12.	Me	H	H	Me	F	Cl	H	H
13.	Me	H	H	Me	Cl	Cl	H	H
14.	Me	H	H	Et	H	H	H	H
15.	Me	H	H	Et	F	F	H	H
16.	Me	H	H	F	H	OMe	H	H
17.	Me	H	H	F	F	OMe	H	H

Sub
C1

24

Sub C'

	R ¹	R ²	R ³	R ⁴	R ⁵	R ⁶	R ⁷	R ⁸
18.	Me	H	H	F	F	Me	H	H
19.	Me	H	H	F	F	Cl	H	H
20.	Me	H	H	F	F	F	H	H
21.	Me	H	H	F	Cl	H	H	H
22.	Me	H	H	CN	H	H	H	H
23.	Me	H	H	CF ₃	H	H	H	H
24.	Me	Me	H	Me	H	H	H	H
25.	Me	H	Me	Me	H	H	H	H
26.	Me	H	F	Me	H	H	H	H
27.	Me	H	Me	F	H	H	H	H
28.	Me	H	OMe	Me	H	H	H	H
29.	Me	H	OH	Me	H	H	H	H
30.	Me	H	H	OCF ₃	H	H	H	H
31.	Me	H	H	OMe	F	F	H	H
32.	Me	H	H	OMe	Me	F	H	H
33.	Me	H	H	OMe	F	Me	H	H
34.	Me	H	H	OMe	Me	H	H	H
35.	Me	H	H	O(Ph)	H	H	H	H
36.	Me	H	H	O(4-OmePh)	H	H	H	H
37.	Me	H	H	O(CH ₂ Ph)	H	H	H	H
38.	Me	H	H	OH	Me	H	H	H
39.	Me	H	H	OH	F	Me	H	H
40.	Me	H	H	OH	Me	F	H	H
41.	Me	H	H	OH	F	F	H	H
42.	Me	H	Me	H	H	H	H	H
43.	Me	H	Me	H	H	F	H	H
44.	Me	H	Me	H	F	F	H	H
45.	Me	H	Me	H	F	H	F	H
46.	Me	H	Me	H	F	H	H	H
47.	Me	H	Me	H	Me	F	H	H
48.	Me	H	Me	H	Cl	F	H	H
49.	Me	H	Me	H	Cl	Cl	H	H
50.	Me	H	Me	H	Cl	H	H	H
51.	Me	H	Me	H	H	Cl	H	H
52.	Me	H	Me	H	F	Cl	H	H
53.	Me	H	Me	H	H	OMe	H	H
54.	Me	H	Me	H	H	CN	H	H
55.	Me	H	Me	H	H	CF ₃	H	H
56.	Me	H	Me	H	H	Me	H	H
57.	Me	H	CH ₂ NHMe	H	H	H	H	H
58.	Me	H	CH ₂ OH	H	H	H	H	H
59.	Me	H	SO ₂ NH ₂	H	H	H	H	H
60.	Me	H	SO ₂ NHMe	H	H	H	H	H
61.	Me	H	OMe	H	H	Me	H	H
62.	Me	H	OMe	H	F	H	F	H
63.	Me	H	OMe	H	Cl	H	H	H
64.	Me	H	OMe	H	Cl	Cl	H	H

GA
Sub
Cl

	R ¹	R ²	R ³	R ⁴	R ⁵	R ⁶	R ⁷	R ⁸
65.	Me	H	OMe	H	F	Cl	H	H
66.	Me	H	OMe	H	Cl	F	H	H
67.	Me	H	H	Me	F	H	F	H
68.	Me	H	H	Me	F	H	Cl	H
69.	Me	Me	H	Me	F	H	F	H
70.	Me	H	H	Me	F	F	F	H
71.	Et	H	H	Me	H	F	H	H
72.	Me	H	F	CH ₂ Me	H	H	H	H
73.	Me	H	H	CH ₂ NH ₂	H	H	H	H
74.	Me	H	H	CH ₂ NHMe	H	H	H	H
75.	Me	H	OH	CN	H	H	H	H
76.	Me	H	H	CH ₂ OH	H	H	H	H

32. (Amended) A compound according to claim 1, wherein the enantiomer is selected from the group consisting of the following compounds:

	<u>R¹</u>	<u>R²</u>	<u>R³</u>	<u>R⁴</u>
1.	H	H	Me	F
2.	OMe	H	F	F
3.	Me	H	F	F
4.	H	H	Cl	F
5.	H	H	F	F
6.	Me	F	H	F
7.	Me	H	F	H
8.	Me	H	H	F